

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte CHIN CHANG, JOSEPH EN-CHENG CHANG,  
and GERT W. BRUNING

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Appeal No. 2001-1893  
Application No. 09/195,297

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ON BRIEF

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Before JERRY SMITH, FLEMING, and BLANKENSHIP, Administrative Patent Judges.  
BLANKENSHIP, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-4, which are all the claims remaining in the application.

We reverse.

### BACKGROUND

The invention is directed to a method of operating a resonant converter (e.g., an electronic ballast for fluorescent lamps). Claim 1 is reproduced below.

1. A method of operation of a resonant converter which is adapted for use as a ballast circuit for controlling operation of a gas discharge lamp connected thereto, the converter being in a form of a full or half-bridge circuit having at least first and second power switches which are respectively actuated by first and second cyclic gating signals of substantially the same frequency, the gating signal frequency being above a resonant frequency of said converter, the first and second gating signals being substantially square waves having complementary duty ratios; said method comprising:

effecting a change in operating state of said converter by increasing the duty ratio of the first gating signal by a selected proportion and decreasing the duty ratio of the second gating signal by the same selected proportion; and

the change in the duty ratio of each of said gating signals being ramped so as to occur incrementally over a plurality of cycles thereof, the incremental change per cycle being the same for both gating signals;

the ramped change in duty ratios producing said change in operating state of said converter with substantial suppression of transient high voltages and currents which would occur with a step-wise change in said duty ratios.

The examiner relies on the following reference:

Moisin et al. (Moisin)	5,583,402	Dec. 10, 1996
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Claims 1-4 stand rejected under 35 U.S.C. § 103 as being unpatentable over Moisin. A rejection of the claims under 35 U.S.C. § 112, first paragraph has been withdrawn.

We refer to the Final Rejection (Paper No. 7) and the Examiner's Answer (Paper No. 10) for a statement of the examiner's position and to the Brief (Paper No. 9) and the

Reply Brief (Paper No. 12) for appellants' position with respect to the claims which stand rejected.

### OPINION

With regard to instant claim 1, the section 103 rejection notes that Moisin fails to expressly disclose "the change in the duty ratio being ramped to occur incrementally over a plurality of cycles." (Answer at 4.) However, the ramped change in the duty ratio is deemed to be inherent, or an "obvious design choice." (Id. at 4-5.) The examiner points to language in columns 7 and 11 of the reference (id. at 6-7), describing the duty cycle "approaching" or "reaching" percentage levels, as support that Moisin teaches a gradual or ramped change in duty ratio, rather than an "immediate" or "sudden" change.

However, we agree with appellants (Reply Brief at 3) that the cited sections of Moisin do not establish that the reference teaches a ramped change in duty ratio "so as to occur incrementally over a plurality of cycles," as required by instant claim 1. To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted).

We find the most pertinent part of the reference, with respect to the issue in controversy, to be the description of the circuitry for dimming level signal 12 and pulse width modulator 10 (Fig. 1; col. 2, ll. 57-64). The reference at column 6, line 50 through

column 11, line 38 describes the circuitry of interest, including a dimming interface circuit (Fig. 6C). A user-provided controller is connected between terminals GREY and VIOLET for generation of the signal transmitted from LED U5 to phototransistor U5 (Fig. 6A) in a symmetry control circuit. However, as admitted by the examiner, the reference does not detail a ramped operation as set forth in claim 1.

The assertion of “obvious design choice” -- that is, the view that the artisan would have found it obvious to change the duty ratio incrementally over a plurality of cycles -- also appears to be based on speculation, absent the provision of supporting evidence (such as an additional, teaching reference). A rejection based on the assertion, without evidence in support thereof, could not stand upon further appeal. See In re Zurko, 258 F.3d 1379, 1386, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001) (in a determination of unpatentability “the Board must point to some concrete evidence in the record in support of...[the]...findings”).

We thus conclude that prima facie unpatentability has not been shown for claim 1, nor for claims 2 through 4 depending therefrom. We do not sustain the rejection of claims 1-4 under 35 U.S.C. § 103 as being unpatentable over Moisin.

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CONCLUSION

The rejection of claims 1-4 under 35 U.S.C. § 103 is reversed.

REVERSED

JERRY SMITH  
Administrative Patent Judge

MICHAEL R. FLEMING  
Administrative Patent Judge

HOWARD B. BLANKENSHIP  
Administrative Patent Judge

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